PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Francois PANZANI, et al.

Appln. No.: 09/722,299

Confirmation No.: 5765

Filed: November 28, 2000

For: SATELLITE TELECOMMUNICATION SYSTEM

Docket No: Q61924

Group Art Unit: 2617

Examiner: Huy D. NGUYEN

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

I. REAL PARTY IN INTEREST

The real party in interest is Alcatel Lucent.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-13 are all claims pending.

Claims 1-13 are rejected under 35 USC 102(b) as anticipated by Stern et al (US Patent 4,799,253).

IV. STATUS OF AMENDMENTS

There have been no amendments filed subsequent to the final Office action mailed May 4, 2007.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention is directed to a technique for simplifying the connections needed to handle multiple antennas each covering a respective area. Fig. 1 shows a region 12 divided into plural regions, e.g., 14_1, 14_2, etc. Each area will be illuminated by a respective antenna 16_i (shown in Fig. 2). As described at lines and with reference to Fig. 3, a switching matrix 22 may be used having inputs 26i each connected to a respective antenna and outputs 28_i each connected to an antenna, such that any input can be connected to any output. As a result, calls from any one of the antennas can be routed to any of the other antennas (see, e.g., lines 12-13 of page 7) or a call from any antenna can be routed back to itself (see, e.g., lines 8-11 of page 7).

The present invention simplifies the system by grouping antennas/areas together and, from a resource allocation standpoint, treating each group of areas the same way a conventional system would treat an individual area. (See, e.g., lines 14-15 of page 4.)

The simplification/grouping is illustrated schematically in Figs. 4 and 5. In Fig. 4, the antennas 16_1 and 16_1 covering areas 14_1 and 14_2, respectively, are connected to the same input/output 30_1, and similarly antennas 16_3 and 16_4 are coupled together to input/output 30_2, and antennas 16_5 and 16_6 are connected together to input/output 30_3. In the simplest form of the invention, the combined input/output 301 for the antennas 16_1 and 16_2 would be connected to one input and one output, e.g., 26_1 and 28_1, of the switch matrix shown in Fig. 3.

As explained, e.g., at lines 18-25 of page 8, resources are allocated to the group instead of the individual antenna.

Claim 1 is the only independent claim in the application. In claim 1, the covered region is 12 in Fig. 1, the plurality of areas are shown by the dots in Fig. 1, two of which are labeled 14_1 and 14_2. The means for combining signals can be a simple wired connection of inputs and outputs of plural antennas as shown in Fig. 2, or may be a more complex coupling such as in Fig. 7 where vertically polarized signals from all of antennas 16_1, 16_2 and 16_3 (all making up a first group M1 as noted at lines 27-29 of page 9) are combined in a first input port 40 and horizontally polarized signals from those same antennas 16_1, 16_2 and 16_3 are combined in port 50. Or the means for combining may be as shown by the combiners (e.g., 72 in Fig. 8) and multiplexers (e.g., 82) as shown in Fig. 8 and described from line 27 of page 10 through line 33 of page 11 of the specification.

The routing means of claim 1 may be the simple switch matrix 22 of Fig. 3, or may be a more complex routing structure including demultiplexers 42, 52 and multiplexers 46, 54 as shown in Fig. 7 (as well as corresponding demultiplexers and multiplexers for the other groups M2-M4) as explained at lines 1-21 of page 10. Similarly the means for routing may be the more complex arrangement of Fig. 8 and including demultiplexers (e.g., 74) and dividers (e.g., 80) as discussed at page 11.

The last paragraph of claim 1 simply reflects the fact that, with inputs and outputs of the group dealt with as a group, each group will be allocated all of the communication resources of the region, as discussed throughout the specification and discussed in more detail above here.

Claim 3 reflects the subject matter described at lines 4-7 of page 8 of the specification, whereby the grouping of areas is chosen such that the traffic load will be substantially the same from one group to another.

Claim 4 reflects the subject matter discussed at lines 6-8 of page 11 and from line 34 of page 11 through line 21 of page 12, whereby a switching means 90, 90', 92, 92', 94 and 94' can be used to re-group the antennas/areas as needed.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are:

1. Whether claims 1-13 are anticipated by Stern et al (US Patent 4,799,253).

VII. ARGUMENT

Claims 1-13 Are Not Anticipated by Stern et al

The present invention is directed to a technique for simplifying the connections needed to handle multiple antennas each covering a respective area. The simplification is achieved according to the present invention by organizing the antennas into groups and then handling the antennas as a group. For example, the two antennas 161 and 162 in Fig. 4 are treated as a group, and they receive a common input at 301. A conventional system might allow antennas 161 and 162 to simultaneously use the same combination of frequency, polarization, code, etc., for two different transmissions, but according to the invention there would be no re-use within a group but only between groups. Another way of expressing this is that in a conventional system antenna 162 would have all of the system resources available to it, and antenna 161 would have all of the system resources available to it, etc., but in a system according to the invention the group of 161 and 162 would have all of the system resources available to the group, but antenna 161 may not have available to it a resource that is being used by antenna 162. This allocation of all system resources to each group (instead of each antenna) is reflected in the last subparagraph of claim 1.

Stern discloses an arrangement wherein there are two systems, an X system and an M system, and these two systems provide service to the same geographical area. It appears that the examiner may be taking the position that each of the X-system base stations covers an area, but there is no discussion of combining the signals from these areas into groups. They are all part of the same system, e.g., the X system, but there is no discussion of combining the signals

from multiple base stations into groups. Further, if the treatment of all X-system signals is considered by the examiner as a "grouping," and the treatment of all M system signals is another "grouping," a problem is that the M system base stations cover the same areas as the X-system base stations, which is contrary to the language of claim 1. Further, and more importantly, the X-system signals are not allocated all of the communication resources of the region, since they do not have available to them the communication resources of the M system, which are in the same region.

It is clear that Stern does not teach or suggest the invention disclosed in the present application. The examiner has attempted to read the claim language on Stern, but in doing so has had to ignore certain requirements of the claims. Claim 1 requires that each group be allocated all of the communication resources of the region. In Stern, the X-system group does not have available to it the resources of the M-system group, and the rejection immediately fails.

For the above reasons, it is clear that claim 1 and therefore its dependent claims 2-13 patentably distinguish over Stern.

Claim 3 Is Not Anticipated by Stern et al

Detailed discussion of the dependent claims is unnecessary, but it is worth at least briefly noting that Stern does not teach or suggest the subject matter of claim 3, since lines 15-27 of column 5 cited by the examiner say nothing about trying to have the traffic in the X system be substantially the same as in the M system. There is a statement that the X-system 102 may have a desired traffic load, but not that it should be the same as the M-system 101. To the contrary, it states that all incoming traffic is processed by the M-system 101 while outgoing traffic is split

between the two systems. This is a clear design attempt to have the traffic handled by the M-system 101 greater than in the X-system 102.

Claim 4 Is Not Anticipated by Stern et al

The examiner has not even attempted to identify support in Stern for the subject matter of claim 4. There is no suggestion in Stern that an area may be transferred from the M-system 101 to the X-system 102. This may be due to the fact that both systems appear to already cover all areas, so the subject matter of claim 4 makes no sense at all in the context of Stern.

Respectfully submitted,

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CLAIMS APPENDIX

CLAIMS 1-13 ON APPEAL:

1. A transmit-receive system on board a satellite for a telecommunication system within a region covered by said system, wherein said region includes a plurality of areas including isolated areas, said system receives calls from any area and transmits said calls to the same area or another area, said system comprising:

means for combining signals from said plurality of areas into groups and

routing means for routing calls from any one of said groups to itself, or to another of said groups,

wherein each group is allocated all of the communication resources of said region.

2. The system claimed in claim 1 wherein said routing means are hardwired.

3. The system claimed in claim 1 wherein said areas are allocated to said groups in such a manner that the traffic is substantially the same from one group to another.

4. The system claimed in claim 1 further comprising switching means for modifying the composition of said groups so that at least one area can be transferred from one group to

another.

5. The system claimed in claim 1 wherein said means for combining said signals of several areas are part of an antenna system.

6. The system claimed in claim 5 wherein said means for grouping said signals of several areas use a beam-forming network.

7. The system claimed in claim 1 wherein said means for grouping said signals from several areas are part of repeater means.

8. The system claimed in claim 1 wherein said routing means allocate communication resources so that said signals received by a first group from a second group are distinguished from signals received from a third group by virtue of having different resources.

9. The system claimed in claim 8 wherein said resources allocated to said groups for interconnecting said groups include frequency bands.

10. The system claimed in claim 9 wherein said resources further include polarizations.

11. The system claimed in claim 1 wherein at least some of said areas corresponding to the same group are geographically far apart.

12. The system claimed in claim 1 wherein the number of areas in a group is from 1 to 10.

13. The system claimed in claim 1 wherein the number of groups is 4.

EVIDENCE APPENDIX:

There was no evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 or any other evidence entered by the Examiner and relied upon by Appellant in the appeal.

RELATED PROCEEDINGS APPENDIX

There are no decisions rendered by a court or the Board in any proceeding identified about in Section II pursuant to 37 C.F.R. § 41.37(c)(1)(ii).